UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/782,149
Filing Date: February 14, 2001
Appellant(s): LEE, YUNG-SEOP

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<u>For Appellant</u>

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 9, 2008 appealing from the Office

action mailed January 23, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

NEW GROUND(S) OF REJECTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-7, 10, and 14-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. .

Claims 1 and 10 are rejected under 35 U.S.C. 101 based on Supreme Court precedent, and recent Federal Circuit decisions, the Office's guidance to examiners is that a § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 437 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780,787-88 (1876). If neither of these requirements is met by the claim, the method is not a patent eligible process under 35 U.S.C. 101 and is non-statutory subject matter.

Claims 1 and 10 recite a process of evaluating a plurality of stored customer records to identify high value customers. Although the preamble of claims 1 and 10 recite that said process is "computer-implemented", this is deemed to be a nominal tie to another statutory class of invention. In this instance, the claimed invention recited in claims 1 and 10 do not result in the transformation of subject matter; rather, a plurality of

records are sorted, assigned values/scores, and high value customers are "identified" and selected. No new article or materials have been created or generated as result of the customer record evaluation process, nor have the evaluation scores assigned to each customer record explicitly appended to existing customer records; thus, no transformation of underlying subject matter is performed.

An example of a method claim that would <u>not</u> qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state. Dependent claims 2-7 and 14-16 merely add further details of the customer record evaluation process recited in claim 1 without including any tie to another statutory category nor any transformation of subject matter into a different state or thing.

Here, applicant's method steps, fail the first prong of the new Federal Circuit decision since they are not tied to another statutory class and can be performed without the use of a particular apparatus. Thus, claims 1-7, 10, and 14-16 are non-statutory since they may be performed within the human mind.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,925,441   Jones   8-2005

Hughes, Arthur Middleton. "Quick Profits with RFM Analysis". Database

Marketing Institute. archived 2/8/99, retrieved from

<http://www.dbmarketing.com/article/rfmtools.html>

"Database Marketing Institute Software". Database Marketing Institute. archived

2/3/99, retrieved from <http://www.dbmarketing.com/ams.html>.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-7, 10 and 14-16 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Arthur Hughes' "Quick Profits with RFM Analysis" (previously

provided and herein referred to as Hughes) in view of Jones et al. (US Patent
#6,925,441).

As per claim 1, Hughes teaches a computer implemented **(on a spreadsheet;
Window's based RFM program called RFM for Windows)** [Paragraphs 13, 16]
method of evaluating a plurality of customer records stored in a computer database
(code the customer database for RFM) [Paragraph 2] to identify high value customers
to be targeted by a customer retention or reward program **(Database marketers, today
however, are finding that they can greatly increase response rates to direct
marketing to their existing customers by use of Recency, Frequency, Monetary
(RFM) analysis)** [Paragraph 1], each customer record having at least a first attribute
and a second attribute, each of the first attribute and the second attribute having an
associated attribute value **{each customer record tracks the most recent
discretionary purchase date, the number of transactions, and the total dollar
sales}**, the method comprising:

(a)   first sorting the plurality of customer records based on the first attribute
(the database is sorted by the total dollar sales) and assigning a discretized attribute
to each customer record where the first discretized attribute is based on the sorted rank
of the customer record for each of the attribute values **(code of 1,2,3,4, or 5, the top
20% given a code of "5", the next 20% coded as a "4", etc.)** [Paragraph 8];

(b)   second sorting the plurality of customer records based on the second
attribute **(If your database keeps track of the number of transactions with your**

customers, you can also code your customers by frequency. Sorting the database by this number - from the most to least frequent) and assigning a second discretized attribute to each customer record where the second discretized attribute is based on the sorted rank of the customer record **(coding the top 20% as "5", and the less frequent quintiles as 4, 3, 2, and 1)** [Paragraph 6];

        (c)   third sorting the plurality of customer records in to an order **(by most total dollar sales to least total dollar sales)** based on the assigned first discretized attribute scores associated with the first attribute **(monetary value) {after ranking the customer records according to total dollar sales, they have also been sorted based according to the assigned first discretized attribute score associated with the first attribute, total dollar sales}** [Paragraph 8];

        (d)   fourth sorting the ordered plurality of customer records resulting from the third sorting in to an order **(by most frequent to least frequent)** where the customer records having the same discretized attribute scores are further sorted based on the assigned discretized attribute scores associated with the second attribute **(frequency) {The records are sorted by the 'monetary value' attribute so that all records with a 'monetary value' attribute of "5" are grouped together, all records with a 'monetary value' attribute of "4" are grouped together, etc. Within each grouping, the records are again sorted according to the 'frequency attribute', resulting in each customer record being assigned one of 25 possible cell code combinations from 55, 54, 53,...11}** [Paragraph 6];

(e) fifth sorting the ordered plurality of customer records resulting from the fourth

sorting in to an order based on the attribute values associated with at least the first

attribute and the second attribute, until records, which have different attribute values

associated with at least the first attribute or the second attribute, have been sorted to

different ranks **{The records are sorted by the 'monetary value' and 'frequency'**

attributes so that within each grouping, all records with a 'monetary value'

attribute of "5" and a 'frequency' attribute of "5" are grouped together, all records

with a 'monetary value' attribute of "5" and a 'frequency' attribute of "4" are

grouped together, etc.}.

Hughes does not explicitly teach the steps of:

(f)   assigning an evaluation score to each customer record based on the rank

of each customer record after the fifth sorting and independent of the discretized

attribute scores; and

(g)   identifying the high value customers by selecting the customer records

that have the highest assigned evaluation scores.

Although Hughes teaches the steps of assigning an evaluation score **(RFM cell**

code assignment) to each customer record [Paragraph 10] based on the rank of each

customer record after the fifth sorting, the evaluation score taught by Hughes is not

explicitly independent of the discretized attribute scores for the first and second

attributes.

However, Jones et al. teaches the step of assigning an evaluation score to each

customer record based on a ranking according to discretized attribute scores for two

attributes **{amount and frequency of purchase}** and further independent of said

discretized attribute scores **(Based upon the amount, frequency of purchase, and**

other factors such as customer profile (e.g., customer demographic data, wealth,

risk, interest, and other indicators), a customer value score 132 is calculated; A

customer value score 172 which strictly relates to the customer's purchasing

habits, is combined together with an offer specific score 174 which takes into

account customer spending, customer financial, and demographic group data are

combined together with information relating to the costs of making the offer 176

to the consumer. These three series of factors and variables are presented to the

NPV calculation engine 178 to arrive at an NPV score) [Column 14, lines 12-16,

Column 15, lines 37-44].

Jones et al. also teaches the step of identifying high value customers by

selecting the customer records having the highest assigned evaluation scores **(it is the**

objective of the present invention to provide the highest value of offers to the

customer and to also maximize the customer response to those offers, it is

desired to have NPV thresholds set at a significantly high level such that

customers will respond to the offers. Thus, after creation of the NPV for the offer

in question 98 the present invention next determines if the NPV is at a threshold

**high enough 102 to be offered to the customer. If the NPV threshold is exceeded,
the offer is sent to the customer 104; presenting an offer to the customer when
the offer value resulting from the net present value calculation is at or above a
specific offer value threshold)** [Column 13, lines 1-10, claim 1].

Both Hughes and Jones et al. are directed towards targeted marketing using
customer purchasing behavior databases that monitors customer purchase frequency,
amounts, and how often purchases are made; thus, Hughes and Jones et al. are
analogous references in the art of database marketing. Therefore, it would have been
obvious to one of ordinary skill in the art at the time of invention to modify the teachings
of Hughes to assign evaluation scores independent of discretized attribute scores, and
further to select customer records having the highest assigned evaluation scores
identifying high value customers, because doing so enhances the ability of Hughes to
use collected customer transaction data to evaluate customers in order to identify high
value customers for targeted marketing offers, which is a goal of Hughes.

As per claim 2, Hughes teaches the method of claim 1, wherein step (a) includes
the steps of:

(i)   breaking the sorted plurality of customer records into a number of groups
(quintiles) based on the rank of each customer record and its first attribute values
(recency, frequency, and monetary) [Paragraphs 4,6, and 8]; and

(ii)   for each customer record in a group, assigning the same first discretized attribute score **(coding the top 20% as "5", and the less frequent quintiles as 4, 3, 2, and 1)** [Paragraph 4,6, and 8].

As per claim 3, Hughes teaches the method of claim 1, wherein step (b) includes the steps of:

(i)   breaking the sorted plurality of customer records into a number of groups **(quintiles)** based on the rank of each customer record and its second attribute value **(recency, frequency, and monetary)** [Paragraphs 4, 6, and 8]; and

(ii)   for each customer record in a group, assigning the same second discretized attribute score **coding the top 20% as "5", and the less frequent quintiles as 4, 3, 2, and 1**.

As per claim 4, Hughes teaches the step of breaking customer records into quartiles **(Changing the division for Monetary from quintiles to quartiles (as shown by the number 4 on the right of the Monetary box))** and that customer records of each quartile are assigned one of the scores of 1,2,3 and 4 **{the top 25% are coded as a "4", the next 25% coded as a "3", etc.}** for the attribute values associated with the one of at least the first attribute and the second attribute [Paragraph 27].

As per claim 5, Hughes teaches the method of claim 1, wherein step (f) includes the steps of:

(i) splitting the customer records, which have been sorted, into a number of groups based on their current ranking **(records are placed into one of 125 unique RFM cells) {the cell placement is done after records have been sorted according to attribute values}** [Paragraph 10].

Although not explicitly taught by Hughes, Jones et al. teaches the step of assigning an evaluation score for the customer records of each group **(Based upon the amount, frequency of purchase, and other factors such as customer profile (e.g., customer demographic data, wealth, risk, interest, and other indicators), a customer value score 132 is calculated; A customer value score 172 which strictly relates to the customer's purchasing habits, is combined together with an offer specific score 174 which takes into account customer spending, customer financial, and demographic group data are combined together with information relating to the costs of making the offer 176 to the consumer. These three series of factors and variables are presented to the NPV calculation engine 178 to arrive at an NPV score)** [Column 14, lines 12-16, Column 15, lines 37-44].

Both Hughes and Jones et al. are directed towards targeted marketing using customer purchasing behavior databases that monitors customer purchase frequency, amounts, and how often purchases are made; thus, Hughes and Jones et al. are

analogous references in the art of database marketing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Hughes to assign evaluation scores independent of discretized attribute scores, and further to select customer records having the highest assigned evaluation scores identifying high value customers, because doing so enhances the ability of Hughes to use collected customer transaction data to evaluate customers in order to identify high value customers for targeted marketing offers, which is a goal of Hughes.

As per claim 6, Hughes teaches the method of claim 1, wherein step (e) includes the steps of:

(i) splitting the customer records, which have been sorted, into 100 groups based on the current ranking of the customer records **(records are placed into one of 125 unique RFM cells; Changing the division for Monetary from quintiles to quartiles reduces the number of RFM cells to 100) {the cell placement is done after records have been sorted according to attribute values}** [Paragraphs 10, 27];

Regarding claim 6(ii), although not explicitly taught by Hughes, Jones et al. teaches the step of assigning an evaluation score to each customer record **(Based upon the amount, frequency of purchase, and other factors such as customer profile (e.g., customer demographic data, wealth, risk, interest, and other indicators), a customer value score 132 is calculated; A customer value score 172 which strictly relates to the customer's purchasing habits, is combined together**

with an offer specific score 174 which takes into account customer spending, customer financial, and demographic group data are combined together with information relating to the costs of making the offer 176 to the consumer. These three series of factors and variables are presented to the NPV calculation engine 178 to arrive at an NPV score) [Column 14, lines 12-16, Column 15, lines 37-44], but does not explicitly assign evaluation scores of between 1 and 100 for customer records of each group.

However, it is old and well known in the art that evaluations and performance ratings are commonly made on a 1 to 100 scale. Further, at the time of invention, it would have been an obvious matter of design choice to a person of ordinary skill in the art to assign evaluation scores of between 1 and 100 for customer records of each group because applicant has not disclosed that the range of scores used to evaluate customers solves any stated problem, is used for a particular purpose nor provides any advantage. Further, the Hughes-Jones combination would have been expected by those of ordinary skill in the art to perform equally well with any range of evaluation scores applied to customer records because the Hughes-Jones combination relies upon grouping and evaluating customers based on evaluations relative to other customers.

Both Hughes and Jones et al. are directed towards targeted marketing using customer purchasing behavior databases that monitors customer purchase frequency, amounts, and how often purchases are made; thus, Hughes and Jones et al. are

analogous references in the art of database marketing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Hughes to assign evaluation scores independent of discretized attribute scores, and further to select customer records having the highest assigned evaluation scores identifying high value customers, because doing so enhances the ability of Hughes to use collected customer transaction data to evaluate customers in order to identify high value customers for targeted marketing offers, which is a goal of Hughes.

As per claim 7, Hughes fails to explicitly disclose the process of reiteratively performing step (d) of claim 1 until customer records, which have the same assigned first and second discretized attribute scores but different attribute values associated with at least the first attribute or the second attribute, have been sorted to different ranks. However, Hughes teaches that a spreadsheet can be used to sort records into different RFM cells and group them together with other records sharing the same two digit cell code **(meaning they have attribute values in the same quintile)** [Paragraphs 10 and 13].

The spreadsheet (embodied on a computer as software programs such as Microsoft Excel or Lotus 1-2-3) used to conduct the RFM analysis can also be used to sort records within the same RFM cell grouping. The spreadsheet software would perform step (d) once to sort records into RFM cell groupings, and once again within each RFM cell grouping to rank individual records by attribute value, if needed. The

concept of sorting data by a certain attribute is old and well known in the art. It is old

and well known in the art that computer spreadsheets can sort records according to any

attribute by which the record is defined. Sorting the plurality of records would allow an

airline to quickly reference, access, and retrieve data. Sorting customers into and within

RFM cell groups may enable airlines to identify and prioritize key customers (for

retention, targeted marketing promotions, etc). Therefore, it would have been obvious to

one of ordinary skill in the art at the time of invention to modify the teachings of Hughes

to include sorting because doing so enhances the ability of Hughes to sort customers

into different RFM cell groups, all cells will have virtually an identical number of

customers, providing statistically valid information regarding the response rate of

members in each cell, which influences which customers to focus marketing efforts on,

a goal of RFM analysis as taught by Hughes [Paragraphs 10, 12].

As per claim 10, limitations (c)-(i) recites limitations already addressed by the

rejection of claim 1 above; therefore, the same rejection applies.

Further, Hughes teaches:

(b)   storing the records in a database **(code the customer database for

RFM)** [Paragraph 2]

As per (a) obtaining records of each customer's contribution factors with associated values, the contribution factors including at least net revenue and number of flights:

Hughes teaches obtaining the frequency of customer purchases (i.e., number of flights) and monetary value of customer purchases (i.e., net revenue), but is not explicitly applied to customers in the airline industry; however, the generic analysis techniques taught by Hughes are applicable to any industry monitoring customer behavior by maintaining a customer database that includes purchase history [Paragraph 4].

Although not explicitly taught by Hughes, it is old and well known in the art that airlines keep extensive records of passengers, including a flight history (how often the customer flies, the number of flights flown, and the destination and point of origin for each flight segment) and the revenue generated. It is old and well known in the art that data analysis cannot be conducted until pertinent information has been obtained. This information could be found on an existing computer database maintained by the airline that could easily be accessed by a computer performing the analysis (imported as a data file, through a file transfer protocol, the Internet, etc). This would eliminate the need to re-enter data into a new database, or to copy data from one format to another (spreadsheet to database, database to spreadsheet, etc). Accessing a computer file to obtain customer information would eliminate these unnecessary steps. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to

modify the teachings of Hughes to include a means of obtaining customer records to

enable an analysis to be performed because doing so enhances the ability of Hughes to

sort customers into different RFM cell groups based on readily available customer

transaction data, with each cell having virtually an identical number of customers,

providing statistically valid information regarding the response rate of members in each

cell, which influences which customers to focus marketing efforts on, a goal of RFM

analysis as taught by Hughes [Paragraphs 10, 12].

As per claim 14, Hughes teaches the method of claim 1, wherein step (b)

includes the steps of:

(i)   breaking the sorted plurality of customer records into quartiles**(Changing**

the division for Monetary from quintiles to quartiles (as shown by the number 4

on the right of the Monetary box)) [Paragraph 27]; and

(ii)   for customer records of the same quartile, assigning one of the scores of

1, 2, 3, and 4 as the second discretized attribute **{the top 25% are coded as a "4", the**

next 25% coded as a "3", etc.} [Paragraph 27].

As per claim 15, Hughes teaches the method of claim 1, where the first attribute

includes the revenue generated by the customer **(code customers by the total dollar**

sales) [Paragraph 8].

As per claim 16, Hughes teaches the method of claim 1, where the second

attribute includes the number of purchases made by the customer **(If your database**

keeps track of the number of transactions with your customers, you can also

code your customers by frequency) [Paragraph 6].

3.   Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Hughes in view of Jones et al., and further in view of the Database Marketing Institute's

RFM for Windows® (previously provided and herein referred to as RFM for Windows).

Claim 11 recites limitations already addressed by the rejection of claim 1 above;

therefore, the same rejection applies

Further, while Hughes and Jones et al. are silent regarding a computer

architecture for evaluating the plurality of records, RFM for Windows teaches a

software, RFM for Windows® that performs the RFM analysis taught by Hughes. RFM

for Windows® has codified means for performing the tasks required of an RFM analysis

and therefore meets the limitation of this claim. Since it could automatically receive data

from a file and perform an RFM analysis, use of this software would eliminate the need

to manually process the records through a spreadsheet, and would automate the

process of sorting records (both into and within RFM cells). Therefore, it would have

been obvious to one of ordinary skill in the art at the time of invention to modify the

teachings of the Hughes-Orme to incorporate the software of RFM for Windows to automate the process of conducting an RFM analysis.

Furthermore, it is well settled that it is not "invention" to broadly provide a mechanical or automatic means to replace manual activity which has accomplished the same result. In re Venner, 120 USPQ 192. It was known at the time of the invention that merely providing an automated way to replace a well-known activity which accomplishes the same result is not sufficient to distinguish over the prior art. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958).

Claim 12 recites limitations already addressed by the rejection of claim 1 above; therefore, the same rejection applies.

Further, although the Hughes-Jones combination is silent regarding a computer system for evaluating the plurality of records, RFM for Windows teaches a software, RFM for Windows® that performs the RFM analysis taught by Hughes. RFM for Windows® has codified means for performing the tasks required of an RFM analysis. RFM for Windows® discloses minimum hardware requirements for using the software. RFM for Windows® requires a computer system comprising of:

a **(80386)** processor [Paragraph 20]; and

a **(8 mb RAM)** memory coupled to the processor, the memory having stored

therein sequences of instructions **(software)** [Paragraph 20], which, when executed by

the processor, cause the processor to perform the steps of an RFM analysis as

disclosed by Hughes.

RFM for Windows® has codified means for performing the tasks required of an

RFM analysis and specifies the minimum hardware requirements for a computer system

running the software, and therefore meets the limitation of this claim. Since it could

automatically receive data from a file and perform an RFM analysis, use of this software

would eliminate the need to manually process the records through a spreadsheet, and

would automate the process of sorting records (both into and within RFM cells).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to modify the combined teachings of the Hughes-Jonescombination to

incorporate the software of RFM for Windows to automate the process of conducting an

RFM analysis.

Furthermore, it is well settled that it is not "invention" to broadly provide a

mechanical or automatic means to replace manual activity which has accomplished the

same result. In re Venner, 120 USPQ 192. It was known at the time of the invention

that merely providing an automated way to replace a well-known activity which

accomplishes the same result is not sufficient to distinguish over the prior art. *In re*

Venner, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958).

Claim 13 recites limitations already addressed by the rejection of claim 1 above; therefore, the same rejection applies.

Further, although the Hughes-Jones combination is silent regarding a sequence of machine readable instructions in machine readable form, wherein execution of said instructions by one or more processors causes the one or more processors to evaluate a plurality of records, each record having at least a first attribute and a second attribute, each of the first attribute and the second attribute having an associated attribute value, RFM for Windows teaches a sequence of machine readable instructions in machine readable form (software), RFM for Windows®, wherein execution of the instructions by one or more processors causes the one or more processors to perform the steps of an RFM analysis as taught by Hughes.

RFM for Windows® has codified means for performing the tasks required of an RFM analysis into a software program available to the public and therefore meets the limitation of this claim. Since it could automatically receive data from a file and perform an RFM analysis, use of this software would eliminate the need to manually process the records through a spreadsheet, and would automate the process of sorting records (both into and within RFM cells). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the combined teachings of the

Hughes-Orme combination to incorporate the software of RFM for Windows to automate

the process of conducting an RFM analysis.

Furthermore, it is well settled that it is not "invention" to broadly provide a

mechanical or automatic means to replace manual activity which has accomplished the

same result. In re Venner, 120 USPQ 192. It was known at the time of the invention

that merely providing an automated way to replace a well-known activity which

accomplishes the same result is not sufficient to distinguish over the prior art. *In re*

Venner, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958).

(10) Response to Argument

Claim 1

Appellant argues that neither Hughes nor Jones teaches "fifth sorting the ordered

plurality of customer records…. until customer records, which have different attribute

values associated with at least the first attribute ort he second attribute, have been

sorted to different ranks". The Appellant notes that the Examiner has asserted that the

attributes on which customer records are sorted are total dollar sales and frequency,

respectively. The Appellant argues that Hughes in no manner describes or suggest

sorting the customer records that have been previously sorted based on the assigned

discretized attribute scores based on either the first or second attributes; rather, the

Appellant argues that Hughes only describes sorting the records once based on the

total dollar sales and once on the frequency.

The Examiner respectfully disagrees. As noted by the Appellant, Hughes sorts the plurality of records based on a first attribute (total dollar sales), and again on a second attribute (frequency), meeting the claimed first and second sortings. In both sortings, the plurality of customer are records are ranked/sorted in descending order (highest values on top, lowest values at the bottom) and further segmented into quintiles; records are assigned a discretized attribute score of "1", "2", "3", "4", or "5" based on which quintile they belong. Each customer record is thereby assigned two separate attribute scores of 1-5 based on a first attribute (total dollar sales) and a second attribute (frequency). Hughes performs this sort for a third attribute (recency), and each customer record is assigned three separate attribute scores of 1-5.

Regarding the claimed third sorting, the Examiner asserts that when the customers records were sorted from most frequent to least frequent [Paragraph 6] and assigned a discretized attribute score, it also satisfied the claimed "third sorting... based on the assigned first discretized attribute scores associated with the first attribute" because all of the top records (that had been assigned the attribute score of "5") were grouped together, all of the records assigned "4" were grouped together, etc.

The teachings of Hughes specify that Recency, Frequency, Monetary (RFM) analysis is based on the ranking of customer records with respect to the attributes of "total dollar sales", "frequency" or "recency" [Paragraph 1]. Hughes further teaches that

"RFM analysis depends on recency, frequency, and monetary measures, but the real power of the technique comes from combining them into a three digit RFM "cell code". Using the quintile system… all customers end up with three digits in their database records. They are either 555, 554, 553, 552, 551, 545, … down to 111. There are 125 different "cells" in all". [Paragraph 10].

Regarding the claimed fourth and fifth sortings, the Examiner asserts that, as noted above, customer records are sorted and assigned discretized attribute scores for two separate attributes (total dollar sales, and frequency), resulting in each customer record belonging to one of twenty-five different theoretical cell groups (55, 54, 53, 52, 51, 45, 44, …. 11) in which customers with the same discretized attribute scores for the first attribute (total dollar sales) may be sorted/separated apart based on their respective discretized attribute score for the second attribute (frequency), thereby satisfying the claimed "fourth sorting.. where the customer records having the same first discretized attribute scores are further sorted based on the assigned second discretized attribute scores associated with the second attribute".

To summarize, after the customer records have been sorted and assigned attribute scores, the customers are segmented according to their corresponding RFM codes. Hughes teaches the additional step of sorting customer records according to recency, where records are divided into quintiles and assigned attribute values of 1-5. Thus, the Examiner asserts that the placement of customers into their respective three

digit RFM cell codes, which is based on the attribute values associated with both the

first and second attributes and a third attribute, meets the claimed limitation of "fifth

sorting the ordered plurality of customer records resulting from the fourth sorting in to an

order based on the attribute values associated with at least the first and second

attributes, until customer records, which have different attribute values associated with

at least the first attribute or the second attribute, have been sorted to different ranks".

Claim 11

The Appellant's arguments with respect to claim 11 mirror the arguments

presented with respect to claim 1. Thus, the same analysis above applies.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the

Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)**

above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer

exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal**

as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the

primary examiner by filing a reply under 37 CFR 1.111 with or without amendment,

affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/P. C./

Examiner, Art Unit 3623

/Beth V. Boswell/

Supervisory Patent Examiner, Art Unit 3623

A Technology Center Director or designee must personally approve the

new ground(s) of rejection set forth in section (9) above by signing below:

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Conferees:

Beth V. Boswell

Supervisory Patent Examiner, AU 3623

/BVB/

Vincent Millin

Appeals Conference Specialist, TC 3600